Name _____ Date_____

Right Triangles
The Converse of the Pythagorean Theorem
Independent Practice

1. Prove that each example below is a Pythagorean triple.

   Part A: $77, 420, 427$

   Part B: $279, 440, 521$

   Part C: $39, 760, 761$

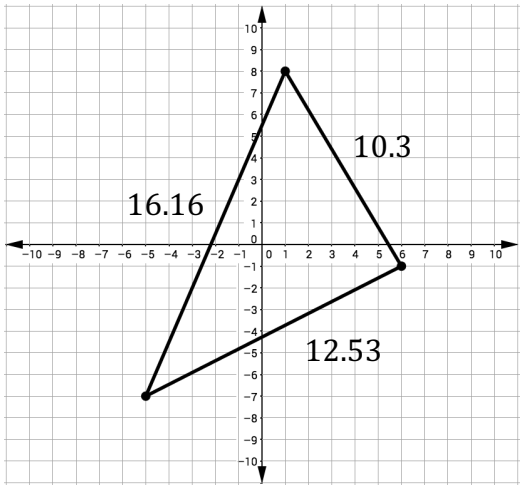
2. Determine if the triples below are right triangles.

   Part A: $290, 696, 750$

   Part B: $514, 684, 855$

   Part C: $450, 1080, 1170$

3. Consider the following figure.



Determine if the triangle on the coordinate plane is a right triangle by using the converse of the Pythagorean theorem.

4. If a triangle has side lengths of $56, 90$, and 106, then determine which number correlates to the legs and hypotenuse.

56 is a _____ 90 is a _____ 106 is a _____

5. How can you determine which of the three numbers is the hypotenuse? Once the hypotenuse is identified, then does it matter which length you substitute for the a and b in $a^2 + b^2 = c^2$? Justify your answer.

6. For any triangle with side lengths a, b, and c, if $a^2 + b^2 = c^2$, then the triangle is a right triangle; if $a^2 + b^2 > c^2$, then the triangle is an acute triangle; and if $a^2 + b^2 < c^2$, then the triangle is an obtuse triangle.

   Determine if the following lengths of a given triangle is an acute, right, or obtuse triangle.

   Part A: $30, 40, 50$ is a(n) _____ triangle.

   Part B: $0.3, 0.4, 0.6$ is a(n) _____ triangle.

   Part C: $11, 12, 15$ is a(n) _____ triangle.

7. Determine which of the following triples is not a right triangle. Select all that apply.

   ☐ $90, 215, 243$
   ☐ $60, 144, 156$
   ☐ $40, 75, 85$
   ☐ $20, 22, 29$
   ☐ $33, 56, 65$